

Notice of Allowability

Application No.

10/755,446

Examiner

James D. Stein

Applicant(s)

MUKAI, KOHKI

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to preliminary amendment filed 1/13/04.
2. ☒ The allowed claim(s) is/are 15-24.
3. ☒ The drawings filed on 13 January 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/092,551.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 0104
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

This Office Action is in response to the preliminary amendment filed on 1/13/04. Claims 1-14 have been cancelled. Therefore, claims 15-24 are pending.

Allowable Subject Matter

Claims 15-24 are allowed.

The following is an examiner's statement of reasons for allowance: None of the cited prior art discloses or suggests a demultiplexer with a control waveguide for branching one control light and introducing a plurality of branched optical signals to the optical signal input ports of a plurality of drop devices, each with a delay gradually shifted in by a specific unit of time; and a signal waveguide for branching a time-division multiplexed optical signal and introducing a plurality of branched optical signals respectively to the optical signal input ports of the drop devices. In other words, the control signal is split and delayed prior being coupled to the input port of a drop device, and the data signal is also split prior to being coupled into the input port of a drop device. The prior art also does not disclose or suggest the signal waveguide and the control waveguide delaying one of the control light and the optical signal relative to each other such that the control light applied to the i-th drop device is synchronous with an i-th channel of the optical signal applied to the i-th drop device. The most relevant prior art, [USPAT 5,703,708] to Das et al, teaches the splitting and delaying of a control signal in gradually shifted units of time, T, prior to being coupled to the drop devices. However, it does not teach or render obvious a signal waveguide for branching a TDM signal and introducing a plurality of branched optical signals respectively to the input ports of the drop devices (Fig. 2).

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[USPAT 6,263,126] to Cao teaches splitting a WDM signal via subsequent stages of drop devices connected in series, but it is in the examiner's opinion that the signal is not "branched" as claimed by applicant. Branching of an optical signal indicates the splitting of the optical power of an optical signal without affecting the frequency spectrum. As one can see in Fig. 4 of Cao, the input signal is being split further at each drop device 310, but the continuing signal is affected in the frequency (wavelength) domain. The continuing signal is missing the wavelength component that has been dropped. Therefore, the continuing optical signal is not "branched" as claimed by applicant. This is typical of add/drop devices in the art. As claimed by applicant, each drop device would have an identical copy of both the input and control optical signals, apart from gradual phase delays shifted in units of a certain time in each branched control signal, which is not the case in the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Stein whose telephone number is (571) 272-2132. The examiner can normally be reached on M-F (8:00am-4:30pm).

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

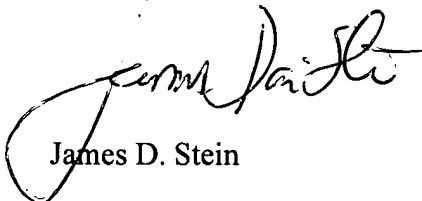
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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

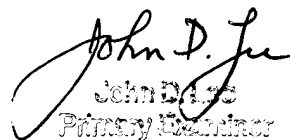
The prior art cited in the Information Disclosure Statement (PTO-1449) has been considered by the examiner.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James D. Stein



John D. Lee
Primary Examiner